

WHAT IS CLAIMED IS:

1. 1. A laser processing machine comprising:
2. a beam guiding chamber adapted for flushing with a flushing gas; and
3. a pressure relief valve coupled to the beam guiding chamber for releasing the flushing
4. gas from the beam guiding chamber.
1. 2. The laser processing machine of claim 1, wherein the pressure relief valve includes a
2. valve chamber and wherein an inner chamber of the beam guiding chamber is connected
3. to the valve chamber.
1. 3. The laser processing machine of claim 2, wherein the pressure relief valve further
2. includes a movably disposed valve disk for opening and closing the valve chamber to an
3. atmosphere outside the beam guiding chamber.
1. 4. The laser processing machine of claim 3, wherein the movably disposed valve disk is
2. attached to a pin movably located within a chamber of the pressure relief valve.
1. 5. The laser processing machine of claim 1, wherein the beam guiding chamber is
2. adapted for flushing with a flushing gas at an overpressure compared to an atmosphere
3. surrounding the beam guiding chamber.
1. 6. The laser processing machine of claim 5, wherein the pressure relief valve is adapted
2. to be opened passively when the overpressure within the beam guiding chamber exceeds
3. a critical overpressure.
1. 7. A method of flushing a beam guiding chamber of a laser processing machine, the
2. method comprising:
3. flushing the beam guiding chamber with a flushing gas; and
4. releasing a portion of the flushing gas from the beam guiding chamber through a
5. pressure relief valve.

- 1 8. The method of claim 7, further comprising flushing the beam guiding chamber with a
- 2 flushing gas having an overpressure compared to an atmosphere surrounding the beam
- 3 guiding chamber.

- 1 9. The method of claim 8, wherein the flushing gas is passively released through the
- 2 pressure relief valve due to the overpressure of the gas acting on the valve to open the
- 3 valve when the overpressure exceeds a predetermined overpressure.